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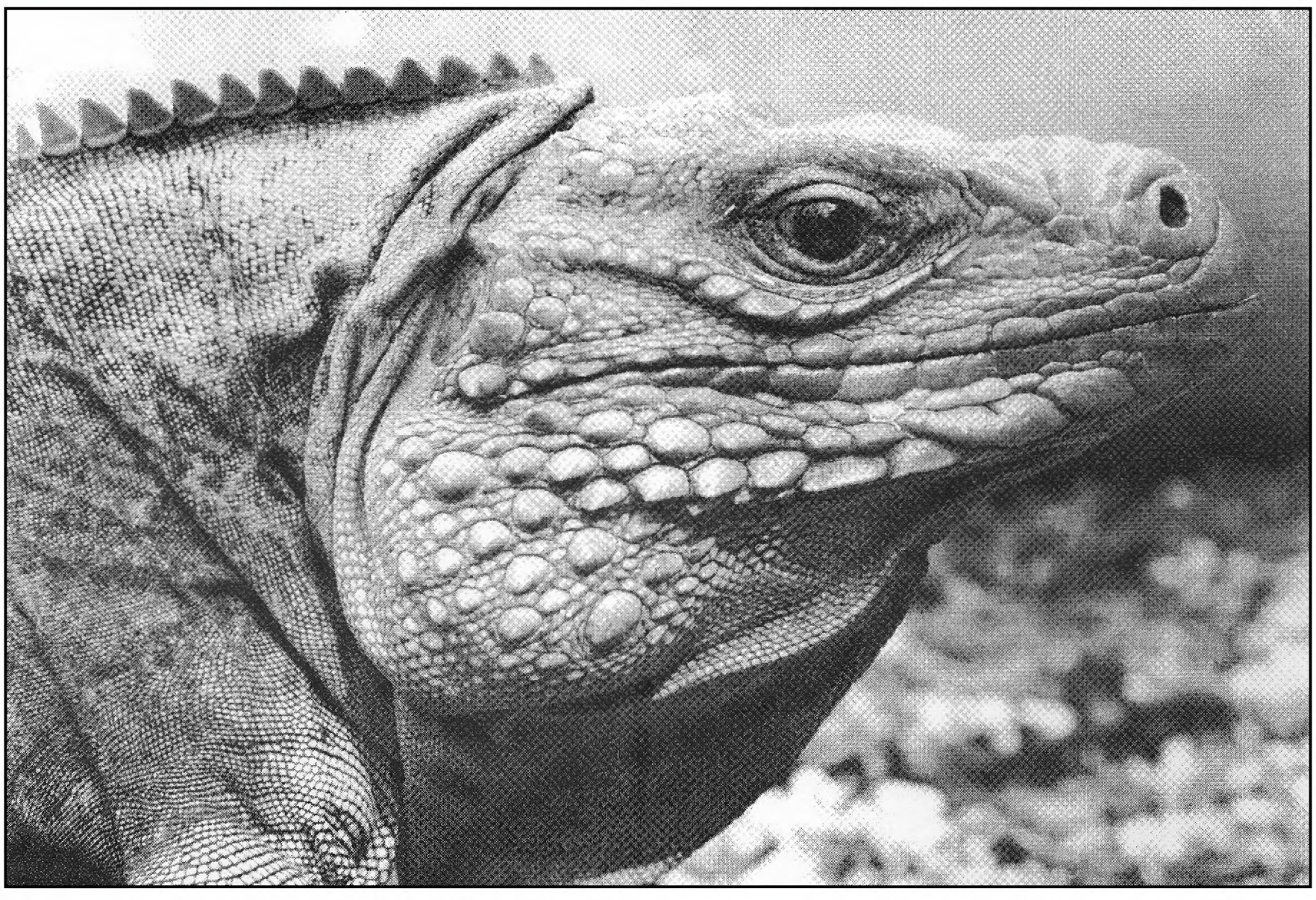

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Bird Predation on the Mudpuppy (*Necturus maculosus maculosus*)

Ron Fassbender[1] and Dreux J. Watermolen[2]

Natural predation on mudpuppies (*Necturus maculosus maculosus*) has been poorly documented. Petranka (1998) suggested that mudpuppy predators include "crayfishes, fishes, and turtles," and Vogt (1981) stated that mudpuppies serve "as a food source for larger fish." Collins (1993) reported northern water snakes (*Nerodia sipedon*) as mudpuppy predators in Kansas. Watermolen (1996) reported an osprey (*Pandion haliaetus*) preying on a mudpuppy on the Menominee River along the Wisconsin–Michigan border. Here, we report three additional observations of birds consuming mudpuppies. All observations took place on Sturgeon Bay (Lake Michigan) within the limits of the city of Sturgeon Bay (T-27-N, R-26-E, Sec. 8), Door County, Wisconsin.

The first observation occurred in June 2001, when we observed a ring-billed gull (*Larus delawarensis*) eating a partially decomposed mudpuppy. The adult gull was standing on a wharf adjacent to the waters of Sturgeon Bay. The mudpuppy, approximately 30 cm in length, appeared to have been dead for at least several days.

The opportunistic ring-billed gull feeds on fishes, small mammals, earthworms, a wide variety of insects, various grains and other plant matter, and refuse (Munro, 1936; Jarvis and Southern, 1976; Haymes and Blokpoel, 1978; Kirkham and Morris, 1978; Blokpoel and Tessier, 1986; Ludwig and Hull, 1989; York et al., 2000). In spite of a diligent literature search, we found only one reference to ring-billed gull predation on amphibians: leopard frogs (*Rana pipiens*) occurred in 3% of ring-billed gull digestive tracts examined by Welham (1987) in Manitoba. Our observation appears to be the first of a ring-billed gull consuming a mudpuppy.

In the second case, we observed a herring gull (*Larus argentatus*) ingesting a live mudpuppy on an ice flow in Sturgeon Bay. We do not know how the mudpuppy got on the ice, but anglers had been in the immediate area a short time before our observation. Anglers regularly catch mudpuppies while ice fishing (Oldfield and Moriarty, 1994; RF and DJW, pers. obs.) and some anglers have been known to discard the mudpuppies either on land or the ice (Petranka, 1998; DJW, pers. obs.). This observation was made in early March 2002, when it would not be surprising for a foraging mudpuppy to grab hold of an angler's bait.

The animal diet of the herring gull consists mainly of fish, crustaceans, mollusks, and insects (Martin et al., 1951; Fox et al., 1990; Ewins et al., 1994). Amphibians comprise only 0.7-1.0% of herring gull diets (Bishop and Weseloh, 1990; Ryckman et al., 1997). Fox et al. (1990) reported unidentified frogs (*Rana* sp.) and toads (*Bufo* sp.) as herring gull food items on Lakes Ontario and Superior, and Harris (1965) listed the European common frog (*Rana temporaria*) and Eurasian common toad (*Bufo bufo*) in herring gull diets in Wales. Fox et al. (1990) also made passing reference to mudpuppies being presented to herring gull chicks at a Lake Erie nesting colony, but provided no details. Our observations confirm mudpuppies as a food item in the herring gull diet.

By far, our most interesting observation again occurred in early March 2002. A common merganser (*Mergus merganser*) was foraging in open water along the edge of a small inlet that was still frozen. Occasionally the merganser would bring a small fish (species unknown) to the surface, turn it, and swallow it head first. On one dive the merganser surfaced holding a small (estimated to be 15–20 cm long) mudpuppy in its bill. As the merganser was attempting to turn the mudpuppy, a herring gull swooped in and stole the mudpuppy from the merganser. The gull then landed on the nearby ice and promptly swallowed the mudpuppy whole.

Common mergansers feed primarily on fish (Leonard and Shetter, 1937; Salyer and Lagler, 1940; White, 1957; Alexander, 1977; McCaw et al., 1996). "Crayfish, shrimps, frogs, insects, and mollusks make up the rest of their diet" (Martin et al., 1951). Amphibians also occasionally show up in merganser diets. Green frogs (*Rana clamitans*) were found in merganser stomachs examined by Leonard and Shetter (1937). Common mergansers may feed on mudpuppies during winter, but mudpuppies comprise only a trace amount of their food volume. For example, mudpuppies accounted for only 4 of 652 food items from merganser stomachs examined by Salyer and Lagler (1940) in Michigan and mudpuppies are rarely mentioned in the literature as merganser prey items.

Our observations add to the few and fragmentary accounts of vertebrate predation on mudpuppies and further document the ecological role of this often misunderstood amphibian.

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Concurrent Existence of Relictual and Contemporary Subspecific Intergrade Populations

Hobart M. Smith[1], David Chiszar[1], Julio A. Lemos-Espinal[2], Gregory J. Watkins-Colwell[3] and Frank van Breukelen[4]

Abstract

Two examples, in *Sceloporus scalaris* and *S. undulatus*, are given of concurrent relictual and contemporary intergrade populations.

Subspecies are generally understood, by those willing to accept the concept, as genetically distinct, allopatric intraspecific populational segments with geographically consistent variation, reliably distinguishable from other conspecifics, usually phenotypically. They are presumably adapted to and coincident with a given combination of geographically consistent environmental factors. The genetic bases of the differences between subspecies are seldom electrophoretically determinable, and for that reason, among others, they are often assumed not to exist. On the contrary, where the preceding requirements are met, subspecies must be genetically distinct, whether the genetic bases can be determined or not.

Inasmuch as suites of environmental factors shift over long periods of time (e.g., over thousands of years), as well as over short periods, it is to be expected that the subspecific populations adapted to them would shift accordingly.

Thus an intersubspecific zone of intergradation, particularly in the especially more climatically variable temperate regions, can be expected to shift polarially in hypsithermal epochs, equatorially in hypothermal epochs. Such shifts of long duration have occurred frequently in the past in most parts of the world; examples are cited in Elias (1985). Comparable shifts in humidity are as pervasive as temperature shifts.

Such shifts have occasionally left isolated populations behind, stranded in locally favorable conditions now surrounded by inhospitable habitats. Peripheral isolates are abundant among reptiles and amphibians, as documented by numerous distributional maps in Stebbins (1985) and Conant and Collins (1991). Not all are necessarily a result of climatic changes, but presumably many are.

If isolation of local populations of species and subspecies can be expected in the normal course of geological and climatic events, relictual intergrade populations should also be expected to survive in favorable habitats, although less frequently than species or subspecies because of the relative small size of intergrade populations. Thus relictual and contemporary intergrade populations could theoretically exist simultaneously and even be far apart geographically.

Possible occurrence concurrently of widely isolated relictual and contemporary intergrade populations is suggested by two examples in the lizard genus *Sceloporus*.

S. undulatus garmani and *S. u. consobrinus* are the primary representatives of the species in the Great Plains. Their present contact zone and area of intergradation (Figure 1) lie in the Panhandle of Texas and southwestern Oklahoma. However, an isolated population in central eastern Colorado appears, as concluded by Lemos-Espinal et al. (1998) to consist of relictual intergrades between these two subspecies, some 480 km north of the other intergrades. The northern intergrade population is likely a remnant, in a local habitat especially conducive to its survival, of a formerly unbroken zone of intergradation in a hypsithermal episode some 8500–4500 years ago, or in a later one 3000–2000 years ago (Elias, 1985).

The isolated population of *Sceloporus undulatus* in central eastern Colorado was initially regarded as intermediate between *S. u. garmani* and *S. u. erythrocheilus* (Smith et al., 1991, 1993, 1995), primarily because of proximity to the latter.

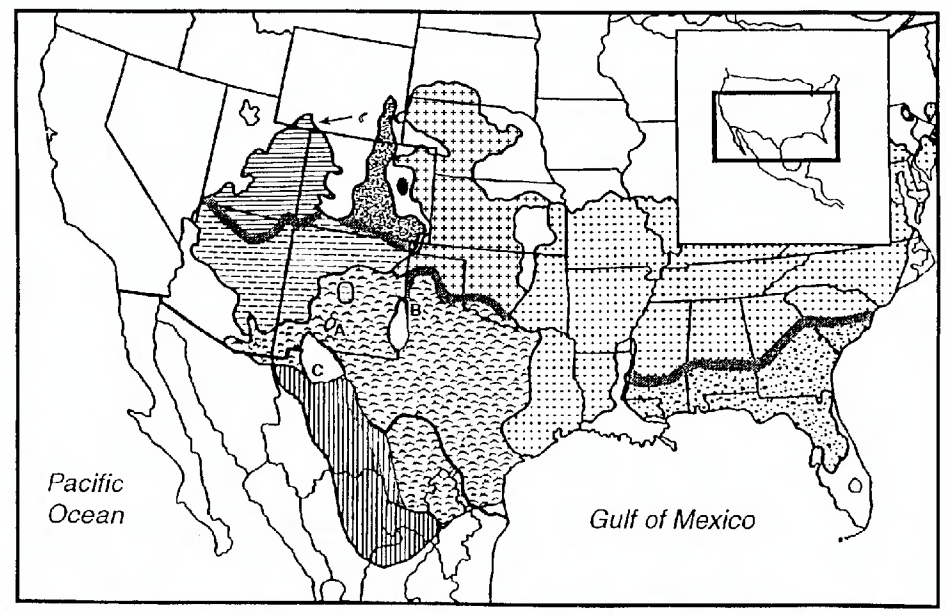

Figure 1. Distribution of the subspecies of *Sceloporus undulatus* and *S. belli* (vertical lines). The broad black belts indicate known contemporary intergrade zones between (from east to west) *S. u. undulatus* (Florida and adjacent states) and *S. u. hyacinthinus* (evenly spaced dots; *S. u. consobrinus* (horizontal crescents) and *S. u. garmani* (evenly spaced crosses); *S. u. tristichus* (horizontal dashes, including an isolated population is central New Mexico) and *S. u. erythrocheilus* (irregularly, closely spaced dots); and *S. u. elongatus* (horizontal lines) and *S. u. tristichus* (horizontal dashes). Intergradation is uncertain at other contact points between subspecies. The arrow in southern Wyoming indicates an isolated population on the Northern Platte River of *S. u. elongatus*. The areas indicated as A, B and C indicate the ranges of *S. u. cowlesi*, *S. u. tedbrowni*, and *S. u. speari*, respectively. The oval black dot in eastern central Colorado indicates a relictual intergrade population between *S. u. garmani* and *S. u. consobrinus*. Map partially updated from Lemos-Espinal (1998).

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Lemos-Espinal et al. (1998) corrected that impression on the basis of more detailed study.

In another example, two subspecies of *S. scalaris* circumscribe the southern end of the main plateau of Mexico: *S. s. scalaris* to the south and east, and *S. s. unicanthalis* to the southwest (Figure 2). Their ranges appear to meet at the east end of Lake Chapala, but no intergrades or sympatry is as yet known from that area. However, intergradation does occur in southern central Nayarit (Smith et al., 1997). Specimens from there are contemporary intergrades. In addition, intergrades are isolated to the south of the present range of *S. s. scalaris*, presumably remnants of a formerly unbroken area of intergradation at an earlier time, the major part of which shifted to the north.

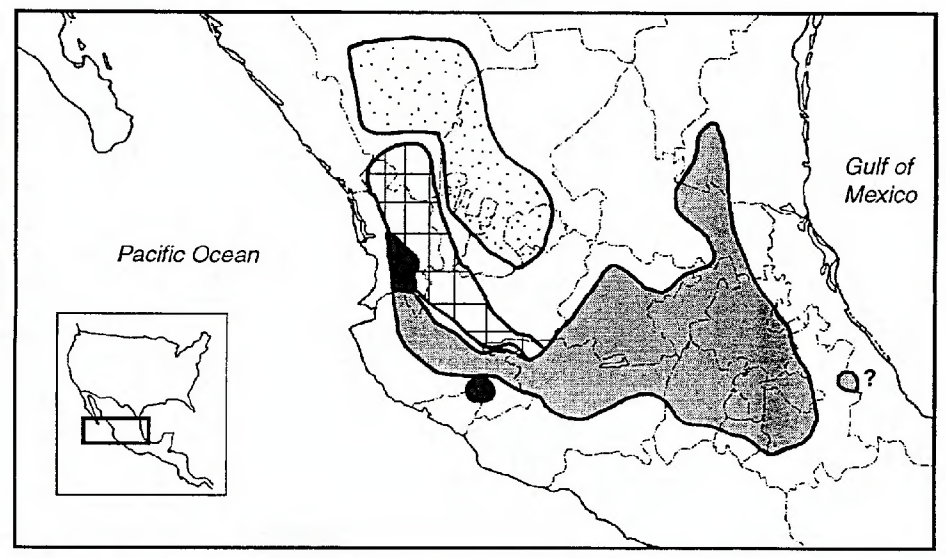

Figure 2. The ranges of the subspecies of *Sceloporus scalaris* in central Mexico: *S. s. scalaris*, gray area; *S. s. unicanthalis*, cross-hatched area; dots, *S. s. brownorum*. The two black areas indicate intergrade populations between *S. s. scalaris* and *S. s. unicanthalis*: contemporary, northern; relictual, southern. Map partially updated from Smith et al. (1997).

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Book Review: *Neotropical Treeboas: Natural History of the* Corallus hortulanus *Complex* by Robert W. Henderson. 2002. Malabar, FL, Krieger Publishing Co., xiv+ 197 pp. $44.50*

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Stephen L. Barten, DVM
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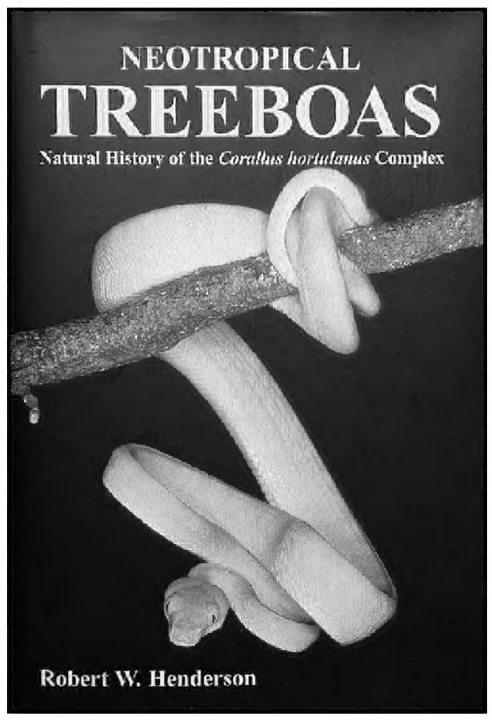
When I was in high school I chose "locomotion in snakes" as the topic for my year-long senior science project. Of course this simply was an excuse for me to acquire exotic pet snakes, since the project required a presentation to the class at the end of the year and I would need live snakes for that presentation. My imagination soared as I read the catalog from a Florida animal dealer listing prices for juvenile to jumbo specimens of every species I had read about in my Ditmars and Kauffeld books: cornsnakes, kingsnakes, scarlet kingsnakes, boa constrictors and even indigo snakes. Mind you, this predated captive breeding, but also every state and national regulatory law including the Endangered Species Act. I placed an order for several of these highly desirable snakes, imagining the dealer to have hundreds or even thousands in his inventory to be able to offer such a variety. Unfortunately a phone call from the dealer informed me that none of the ordered snakes were in stock or available.



"What *do* you have?" I asked naively.

"We have some nice Cook's treeboas." In hindsight these snakes were most likely either *Corallus hortulanus* or *Corallus ruschenbergerii* from mainland South America, and not what is now known as the St. Vincent treeboa, *Corallus cookii*.

Perfect. I could use a treeboa to show concertina locomotion on a tree branch. At the time I was unaware of the reputation for aggression this species had. In fact, the most common adjective used in conjunction with treeboas is "irascible." The snake that arrived was fully 6 feet long with a massive head disproportionate to its thin body. The bulging masseter muscles advertised a powerful bite, and the amazingly long teeth were evident whenever the snake yawned. In temperament this treeboa was evil incarnate, showing dead eyes devoid of emotion and a tendency to strike repeatedly at anything that moved within a range of 100 yards. If fact, during the presentation the snake refused to crawl at all, and only struck at the class over and over while the teacher watched from the doorway. I got an "A."

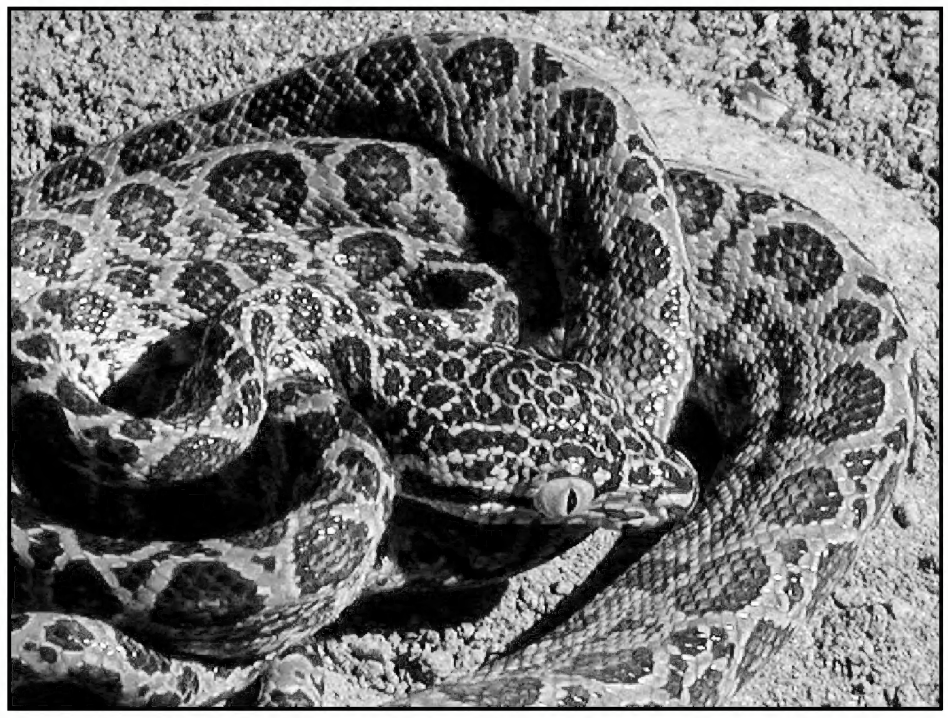
This was my introduction to treeboas.

Over the next thirty years, this eye-opening experience prevented me from further investigation of this interesting and beautiful species. Even Joan Moore's imaginative use of elbow-length welding gloves to handle a couple of small "irascible" specimens could not win me over.

On the other hand Robert Henderson, Curator of Reptiles at the Milwaukee Public Museum, was never hung up (ha!) on the long teeth or aggressive personality of treeboas. Approximately fifteen years ago he began research on snakes of the treeboa genus *Corallus*. A series of Henderson's papers appeared in the literature (the book being reviewed here references 34 publications for which Henderson is the senior author) and was accompanied by lectures to various herpetological groups. The *Bulletin of the Chicago Herpetological Society* and the CHS general meetings both have been graced by Henderson's interesting presentations. His images of these highly variable, colorful snakes are stunning and captivating.

Henderson's research culminated in the recent publication of *Neotropical Treeboas: Natural History of the* Corallus hortulanus *Complex*. When I acquired that first huge, snappy individual, treeboas were considered a single species, *Corallus enydris*. Some, but not all, herpetologists recognized two subspecies, *C. e. enydris* and *C. e. cookii*. In 1996 the scientific name was corrected to *Corallus hortulanus,* but treeboas still were considered a single species. Soon thereafter Henderson divided the complex into the four species currently recognized. Each is named for its home range: the St. Vincent treeboa, *Corallus cookii*, the Grenada Bank treeboa, *Corallus grenadensis*, the Caribbean coastal treeboa, *Corallus ruschenbergerii*, and the Amazon treeboa, *Corallus hortulanus*. This book is a summary of Henderson's fieldwork investigating the natural history of this group of snakes. In spite of centering on field data, it is a highly readable and interesting book.

All four species of the complex are treated in detail, although the emphasis of Henderson's research has been the common and highly variable Grenada Bank treeboa, *Corallus grenadensis*. In fact, the preface to the book begins, "If you're ever in Grenada, do yourself a favor and follow these simple instructions," and proceeds to describe how to find treeboas there. Gery Herrmann and I found Henderson's formula to be both easy and effective when we joined a group of veterinarians for a scuba diving trip to Grenada last fall. We spent one night shining flashlights into the acacia trees and found three treeboas: a juvenile snake with a bold black pattern on a background of scarlet red and canary yellow, a three-foot-long yellow snake without a pattern, and another same-sized one colored light



A juvenile Grenada Bank treeboa, *Corallus grenadensis*, with a bold black pattern. The background color on the head is yellow, while that on the body is bright red. The snake was found on Grenada at night, crawling in an acacia tree about 10 feet off the ground. Photograph by Stephen L. Barten

A small adult Grenada Bank treeboa, *Corallus grenadensis*, colored dull yellow with no pattern. The snake was found within 50 yards of the snake shown at left.

gray with dark gray blotches. Surprisingly, all three snakes only tried to bite when initially picked up and almost immediately calmed down. In fact Henderson comments that captive snakes bite only when "cornered," while wild snakes bite only when touched. Our experience confirmed his conclusion that these snakes may not deserve their reputation for excessive aggression. Seeing any boid snake in the wild is quite a thrill.

The book begins with a chapter titled "Introduction, Methods, Species and Study Sites." Henderson recounts his own personal history studying treeboas, listing his research goals as learning about both treeboa natural history and the impact of humans on the ecology of treeboas. He describes this book as a progress report detailing both what we know and what we have yet to learn. Henderson recounts his methods of finding snakes and collecting data, the use of radio transmitters, and his technique for calming aggressive snakes in the field by covering their heads with the fingers cut from a glove. Each of the four species is defined and described in some detail and detailed range maps are provided. Their habitats within those ranges are both discussed and illustrated, with more emphasis on Grenada than any other site.

The second chapter encompasses color and pattern, meristic characters and size. *C. cookii* and *C. ruschenbergerii* exhibit little variation in color and pattern, while *C. hortulanus* and especially *C. grenadensis* show extraordinary variation. Interestingly, there is an ontogenic color shift as snakes grow. Conspicuous pink or salmon in neonates fades to white or off-white, orange or red backgrounds fade to brown, and yellow snakes become darker with age. Size and mass vary between the species in the *C. hortulanus* complex, and differences probably relate to diet and habitat used. *C. ruschenbergerii* is the longest species while *C. cookii* and *C. grenadensis* are the shortest. *C. ruschenbergerii* also has more mass than same-sized members of the other species.

Additional chapters discuss habitat and habitat use as well as activity. Food and foraging is described separately for each of the four species. Literature records, personal observations and anecdotes from locals are all listed. The complex data on treeboa diets is well organized and presented visually in four tables and eight figures. These snakes typically eat *Anolis* lizards as juveniles and mainly switch to rodents as adults, although birds and bats also are taken. Surprisingly, Henderson has never seen a gecko in the stomach contents of a member of the *C. hortulanus* complex. Predators and defensive behavior comprise one chapter. Only the colubrid snake *Clelia clelia*, opossum and smooth-fronted caiman, *Paleosuchus trigonatus*, have been documented to feed on treeboas, but monkeys, bats and toucans have been observed mobbing them. Other chapters treat reproduction, population structure (abundance, densities and encounter rates), and ecological relationships with other boid snakes. The final chapter covers the impact of humans on treeboa populations. Obviously habitat degradation from both growing human populations and agriculture has the most dramatic effect on treeboas. Henderson also lists data on exportation of treeboas for the pet trade. Between 1990 and 1996, exported treeboas included 13,416 *C. hortulanus* from Guyana and Suriname, 125 *C. grenadensis* from Grenada, and 206 *C. ruschenbergerii* from Trinidad and Tobago. For comparison, 6,830 emerald treeboas, *C. caninus*, and 9 annulated boas, *C. annulatus*, were exported during the same period. Henderson lapses briefly into philosophy. He describes the estimated 1200 treeboas preserved in scientific collections worldwide, which were collected over a period of more than 100 years and are perpetually available for scientific study by any number of scientists. He compares that to 18,000 treeboas exported for the pet trade over a 13-year period—fifteen times as many snakes in one-tenth the time. Henderson "wonders what became of those 18,000 treeboas and what we learned from them."

In spite of being a scientific book, it is quite interesting and

easy to read. Henderson claims that more is known about the natural history of *C. grenadensis* than any other snake in the American tropics, with the probable exceptions of the Puerto Rican boa, *Epicrates monensis*, and the green anaconda, *Eunectes murinus*. In spite of this much is *not* known, and as a result the book is concise—even brief—and does not bog down in technical jargon. A variety of charts and graphs are used to present complex data, and this is juxtaposed with entertaining descriptions of field work. There is a myriad of information concerning the physical characteristics and behavior of these fascinating snakes.

There are 32 color plates in the center of the book and a number of black-and-white photographs throughout the text. Overall the quality of the photographs is much better than average. Many earlier books published by Krieger suffered from crowded, postage stamp-sized illustrations that were often blurry or dark. There are only two color plates per page in this book, and with the exception of plate 29, which was obviously taken from a distance at night, they have good contrast and sharpness.

The reference list is extensive, with an even 20 pages averaging 20 or more references per page. The lists are divided into two sections—literature cited and additional references—allowing the reader to pursue various topics in greater detail.

As the title implies, this book limits its scope to the *Corallus hortulanus* complex. Other members of the genus *Corallus*, such as the well known emerald treeboa, *C. caninus*, are relatively common in collections but are not mentioned in this text. Likewise this book discusses only natural history and not husbandry or care in captivity. In contrast, Stafford and Henderson's 1996 book, *Kaleidoscopic Tree Boas: The Genus* Corallus *of Tropical America*, covers other members of the genus and also discusses the care of captives. Nevertheless, natural history data are useful to treeboa keepers in that they might provide temperatures, humidity levels, habitat and diets mimicking those utilized by wild snakes. Likewise, reproductive data are likely to be useful to breeders of this species.

Earlier herpetological books produced by Krieger Publishing sometimes suffered from cheap materials, sloppy editing and poor reproduction of photographs. This book represents a significant improvement and enjoys high production values. The fonts are easy on the eyes, the tables and graphs clearly present their data, and the photographs are sharp and clear. The cover is heavy and the binding is sturdy so this book should withstand some abuse. *Neotropical Treeboas: Natural History of the* Corallus hortulanus *Complex* is very well produced and is more like a small textbook than a cheap, throwaway, pet store booklet. I highly recommend it to anyone interested in treeboas.

Literature Cited

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Bull. Chicago Herp. Soc. 37(8):143-145, 2002

HerPET-POURRI

by Ellin Beltz

Death of an editor

Sean McKeown, my editor at the now defunct *Vivarium* magazine, passed away at Stanford Medical Center after a long battle with heart disease. Sean was involved with the Honolulu Zoo for many years before retiring and moving to California. Regular readers may recall that he was placed on an external artificial heart for months a few years ago, while waiting his heart transplant at Stanford. I hadn't heard much from him since then; I assumed all was well, but it was not.

Don't swim, feed or tease the gators

Even though Florida officials warn and warn again about swimming in alligator infested water and most especially during alligator mating season, a father took his two children swimming in the Withlacoochee River. The 10-year-old girl was grabbed by an alligator and her father came to her rescue. The alligator was killed, and measured 10 feet, 11 inches. Since 1948, there have been 12 fatal alligator attacks out of the 300 known attacks. [Orlando *Sentinel*, June 16, 2002, and the Leesburg *Daily Commercial*, June 18, 2002, both from Bill Burnett]

Dead snakes

Nine rattlesnakes seized in a drug bust were euthanized by Florida Fish and Wildlife order because they were crossbred timber and diamondback rattlesnakes. Their owner also faces charges of illegally possessing the snakes and growing marijuana. Officers stated that "This guy just like snakes. He wasn't using them as a booby trap." [June 22, 2002: Leesburg *Daily Commercial* and Orlando *Sentinel*]

Dead iguanas

Traces of oil leaking from a tanker a year ago, may have killed more than 15,000 Galapagos iguanas, according to a study published in *Nature*. In one colony on San Cristobal Island, 62 percent of the animals previously marked, died. Researchers found a large number of skeletons on the coast. Other areas unaffected by the spill still have flourishing iguana populations. [*Miami Herald*, June 6, 2002, from Alan Rigerman]

More dead turtles

The remains of four dead and butchered green sea turtles were found on Moloa'a Beach, Kauai'i, Hawai'i. Killing a sea turtle

is a federal offense with fines up to $25,000 and a year in prison. It appeared as though they were killed for their meat or eggs, but their state of decomposition made it hard to tell much of anything from the remains. [*Honolulu Advertiser*, June 20, 2002, from Ms. G. E. Chow]

More deformed frogs
A new study published in the *Proceedings of the National Academy of Sciences* suggests that both pesticides and parasites are causing frog deformities. Researchers found that while trematode worm infections were widely found, deformity rates in wood frogs are higher in areas where the infected frogs are exposed to pesticide runoff which may boost the population of snails which transmit the trematodes to frogs. [*Chicago Tribune*, July 9, 2002, from Claus Sutor and Ray Boldt]

More condos, less turtles
After five years of struggle between real estate developers and people concerned about animals and their environment, the U.S. Fish and Wildlife Service approved a development of high-rise condominiums along a half-mile of beachfront sand dunes on Alabama's Fort Morgan Peninsula. The action gives the developers permission to "take" (meaning "kill") endangered Kemp's ridley sea turtles, endangered mice and threatened green and loggerhead sea turtles. Environmentalists note that this stretch of beach is some of the last remaining undisturbed sand dune habitat along the Alabama Gulf Coast. The agency, on the other hand, concluded there would be "no significant impact." [*Chicago Tribune*, April 28, 2002, from Claus Sutor] One wonders what would be needed to make a "significant impact" recognizable by any bureaucrat.

More nets, less turtles
Louisiana shrimpers are hopping mad again, claiming that new turtle protection regulations changing the size of turtle excluder devices from 32 inches to 71 inches will be too expensive and that TEDs are a "hindrance, especially when underwater trash common to Louisiana's inshore water props them open, allowing shrimp to pass through their nets uncaught." They also claim there are no turtles in the inside waters they fish anyway. Researchers point to the high numbers of dead turtles showing up on the beaches as proof that the TEDs aren't big enough. Officials expressed surprise at the hostility aimed at them by the shrimp fishermen and apologized for not providing written materials about the proposed rules changes. [Houma, Louisiana, *Courier*, November 6, 2001, from Ernie Liner]

More people, less turtles
"Commercial fishing and development of coastal property where [sea] turtles lay eggs are the largest threats to their population," said a marine researcher. Counting turtles can also be difficult as they spend most of their time at sea. However, counts at turtle nesting beaches in Mexico, Costa Rica and Malaysia show fewer returning turtles. Commercial swordfish fishing is blamed for much of the decline. Their lines are put out in international waters where regulations and restrictions cannot, apparently, be enforced. [*Honolulu Advertiser*, April 24, 2002, from Ms. G. E. Chow]

More turtles, less people
Every year people call from around the world, trying to get a turtle ticket to watch giant sea turtles lay eggs at the Canaveral National Seashore. Only 30 people per night are allowed on the ranger-guided walks. Last year all the tickets were given away in four hours, this year, hundreds of callers had to be turned away. Mark your calendar for next May 1, and then call (386) 428-3384, extension 18. [*Orlando Sentinel*, May 13, 2002, from Bill Burnett]

More turtles might mean more turtles?
While some turtles are being saved in "head-start" programs, many more are never being born because adult turtles are continually harvested for the pet trade, supposed medicinal value and for food. Resource managers are just beginning to see that if you take away long-lived adults, you won't get any babies—even though turtle people have been pointing this out for years. [*Discover Magazine*, June 2002, from Eloise Beltz-Decker]

One turtle released
After 2½ years of rehab, workers from the New England Aquarium released a green sea turtle in Florida. The turtle had been hit by a boat and severely injured. More than 100 turtles were released last year by Florida rehabilitation centers. The turtle was outfitted with a transmitter which may send information about where it goes and what it does now. [*Orlando Sentinel*, May 15, 2002, from Bill Burnett's mom]

Quote of the month
"The truth is that snakes really are more scared of humans than we of them and nearly all that live around here [northern Indiana/Illinois] are harmless. There is only one venomous snake in Michiana—the eastern massasauga rattlesnake—regardless of what your buddy may tell you." Louie Stout, *South Bend Tribune*, July 7, 2002. CHS member and Michigan State Herpetologist, Jim Harding is also quoted in the article. If you have any Michigan massasauga sightings, you can report them at the Michigan DNR web site "http://www.michigandnr.com" under "wildlife observations." You can submit photos but you are asked not to bother, pick up or kill the snake. [*South Bend Tribune*, May 26, 2002, from Garrett Kazmierski]

News of the Weird
Chuck Shepherd continues to mine the daily news for items of oddity for his column. Recently several arrived in my mailbox. From his July 5 column "Two years ago . . . [a] New York doctoral student . . . was having himself medically altered to resemble a lizard with sharpened teeth and a forked tongue. Last month, after [a] tattoo artist . . . began publicly seeking a surgeon to separate his tongue into two halves, the Michigan House of Representatives defeated a measure that would have banned tongue-forking surgery." On June 21, Shepherd reported that "A man settled down to sleep in his apartment and between the sheets found a three-foot-long snake left behind by a previous tenant." [Both from the Chicago *Reader* from Ray Boldt]

Smell the coffee and die

After five years of complaint, federal and state officials in Hawai'i plan to attack noisy coqui frogs, native to the Caribbean which have taken up residence on the Big Island and Kauai. The initial attack will be funded by a $200,000 federal grant and $87,500 from Haleakala National Park. U.S. Department of Agriculture officials hope to have $10.8 million dedicated to the eradication effort in the next few years. Officials estimate that the coquis can reach populations of 8,000 frogs per acre and eat 46,000 other living things every night. Stories of local people's efforts to kill them off one by one include a man who climbed a ladder in the middle of the night and shot the frog with a BB gun and another man who paid local kids $5 per frog captured. All the residents want is peace of mind, they claim the coqui destroys concentration and makes it impossible to sleep. [Honolulu *Star-Bulletin*, July 7, 2002, from Ms. G.E. Chow]

Best tombstone of the month

Headline: "Asteroid almost collides with Earth." Adjacent headline "Snake charmers wanted," not to move the asteroid, but to remove snakes from the infested campus of Vidyasagar University in the Indian state of West Bengal. [*Caymanian Compass*, June 24, 2002, from Larry Reed]

Claw-dius wrecked

An African clawed frog (*Xenopus* sp.) was turned in to Hawai'i state agriculture officials after it was found in a jar on the steps of a high school accompanied by a note that said they did not want to release the frog. People possessing illegal animals in Hawai'i face fines up to $200,000 and three years in jail. [Honolulu *Star-Bulletin,* July 3, 2002, from Ms. G. E. Chow]

Bubba, gator or chameleon?

Anyone who has gone to a CHS show, knows Bubba the alligator. Lo and behold, reading the *Chicago Tribune*, I find that Bubba came out for a media event at the Rain Forest Cafe in downtown Chicago. The intent was to make Steve Irwin (of Crocodile Hunter infamy) feel at home or to scare the writers enough to make them write a good feature. However, the author of the Trib's piece wrote: "Steve Irwin, a.k.a. the Crocodile Hunter, is belly down on the ground and nose to nose with Bubba, a crocodile." [July 9, 2002, from Ray Boldt]] Steve was also quoted as saying to Bubba, "You're gorgeous." I guess I could get to like this guy, especially if I never had to see another one of his shows!

A true gator aid

Researchers have found that the honeycomb of bumps covering an alligator's jaw is full of nerve sensors so sensitive that they can detect ripples caused by a single drop of water. Half-submerged gators use these sensors to pinpoint splashes, which may be from a food item or a kid just swimming around. The nerves all connect to a large nerve in the alligator's skull. [May 16, 2002: *USA Today* and *Orlando Sentinel*, both from Bill Burnett]

Turtles all the way down

• Turtle Independence Day Celebrations are held each July 4 on the Kohala Coast of the Big Island of Hawai'i as the baby turtles hatch and head for the sea. [*Chicago Tribune*, June 23, 2002, from Ray Boldt]

• A caption under a picture of people watching the annual turtle race in Huron, Indiana, reads: "These spectators are watching turtles crawl because: A. The nation's couch potatoes are finally turning off the TV; B. The humidity in Huron, Indiana, interferes with watching paint dry; C. It's a taping for the upcoming series `Survivor: Indiana'; D. What else would you do before a Memorial Day parade?" [*Chicago Tribune,* June 2, 2002, from Ray Boldt] The same picture in the *South Bend Tribune*, May 29, 2002 [from Garrett Kazmierski], is captioned more sedately.

• June 12–15 were "turtle days" in Churubusco, Indiana. No one knows who started the story, but legend says that "in 1948, a farmer spotted a snapping turtle with a shell as big as a dining room table, a head the size of a ten-year-old child, and a neck as wide as a stovepipe," according to the *Chicago Reader* [May 31, 2002, from Ray Boldt]. No monster reptile has ever been found even though the lake has been searched repeatedly over the years. In any case, the town started its Turtle Days festival in 1950. On June 26, 2002, the *Tribune* sent a writer to Churubusco to investigate "the ongoing mystery of Indiana's Sasquatch in a Shell." The lake where the turtle lurks covers about 7 acres and reaches a depth of nearly 60 feet, plenty of space to hide a dinner-table sized object that does not wish to be found. One person claims to have been told by the original discoverer that he made the whole thing up, but local people don't want to even think that the turtle is merely a legend. Churubusco is such a turtle town, that there are turtles on their signs and in their school teams, but maybe not in the lake. The note from Ray Boldt read "Ellin, don't move, it's right behind you. . . . I hope I'm not too late!" Maybe I would have worried in Chicago, but Ferndale's too far for even a dinner-table sized turtle to crawl!

Thanks to everyone who contributed this month and to Marty Marcus, Paul Sereno, Gabe Lyon, Wes von Papineau, Allan Salzberg and Marco Mendez for what they sent by mail and E-mail. Computer contributions will again be used next month and only computer contributions unless some more material shows up in the mailbox as I used everything I had to write this column. You can contribute, too. Send whole pages of newspapers or magazines with your name on each piece to: Ellin Beltz, P.O. Box 934, Ferndale, CA 95536. Send anything you want to my email "ebeltz@ebeltz.net." Please, however, realize that we are on the end of the westernmost phone wire in the conterminous U.S. and that if you send me the full text of this week's *Congressional Record*, I will send you back something equally huge and impenetrable.

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Great Herp Searching

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On our first herp search my husband and I took our daughter Becky (7 years old), our son Derek (4 years old), and my daughter's friend Samantha, (also 7 years old). We were excited not only to experience what Ethel Woods had to offer but also to be sharing this fantastic nature experience with our daughter's guest. We felt quite secure in the idea that we, "master nature nuts" that we are, would be the ones showing Samantha all there was to see in the woods. Like many people, Samantha had no hands-on experience with nature. She was excited to go along and when we arrived, a bit late I'm afraid, there was no one in sight. Being adventurous types and liking to blaze our own path, we set straight off into the woods to see what great critters we could find. After traipsing around 300 yards or so, we hadn't seen a thing until my husband spotted a tiny bit of movement way off to the side of us.

As we neared, we were amused to see the tiny bit of movement was a stick waving in the air attached to a woman by the name of Joan Moore. (Not exactly the wildlife we were anticipating.) She was sitting very quietly on a log and fervently waving us to her in a sort of roundabout path to avoid disturbing something amazing but completely invisible to us "master nature nuts." We were stunned when she said, "Turn around and look again, directly in that bit of dried leaves in the sunshine." As we looked now, with a hint from an experienced and TRUE "master nature nut," we now were aware of a beautiful tiny fawn, hardly bigger than a cat curled up among the browned leaves. The spots and tan fur blended perfectly with its surroundings. It barely breathed as we watched and listened to Joan's tale of how she herself nearly stepped on it and how she didn't want to leave this spot until someone came her way so she could share this wonderful find. Herp searches are designed to help researchers track quantities and types of herps, but they have all kinds of benefits and surprises for the searchers, novice and experienced alike.

Upon leaving this sight with our fellow searcher we found the rest of the group spread out farther into the woods. We were treated to stories of what had been found so far, followed with advice on how to look for the herps. We then began happily and expectantly searching for those elusive herps. Throughout the afternoon there would be calls of "Come and see this!" as each person caught site of or captured a new critter. The excitement level was reminiscent of kids in kindergarten on show-and-tell day. It was a great feeling. Even for those who weren't making a find of their own right away. The list of herps grew as frogs and snakes, even salamanders with sky-blue spots (hence the name blue-spotted salamanders), were announced and shared. We even made note of a scarlet tanager. That was the brightest red bird I've ever seen! She was darting about the ground near a dead tree as if playing a game of "see if you can keep your eyes on me you silly humans with binoculars!" The end of the search culminated in last minute finding of another fawn (under a bush this time), a garter snake, and three more blue-spotted salamanders communing under a log. What a great time! We came out with a sense of wonder and amazement at what we found, and that there were so many wonderful people who shared our interest and curiosity about the critters in our world.

Because we had such a great experience, we made time in our schedule for two more of the Great Herp Searches and were not disappointed.

One was to Nelson Lake Marsh in Kane County. This time we brought Devin, a new little guest. (We like to initiate as many young ones as possible into the herp-lovers tribe.) It was just me and three little kids. The researcher, Drew Ullberg, gave us a tour of the area thinking there weren't going to be any other searchers. There were plenty of searchers on the other trips but this was a holiday weekend, threatening more rain and already an hour or more past the start time. After our tour we discovered three more searchers arriving (all the way from Chicago in holiday traffic—what dedication!) After introductions we went on a second more adventurous tour where we experienced the areas the public is discouraged from entering. We went into the fen and were treated to a romp on floating land! Yes, it's really called a floating peat mat but it held us up and it swished, swayed and made big ripples in the water as we jumped up and down on it. We also saw various large water birds, spotted a number of smaller birds, and watched for turtles and snakes along the way. Because it wasn't sunny out, there weren't any warm spots where turtles and snakes would bask on a cool day so it wasn't a scientifically productive day. Nonetheless, we really were treated to many new and exciting experiences and came away wishing more people had come to share them. This trip was a real treat!

The last herp search at Goodenow Grove in the Plum Creek Forest Preserve was also a blast. This time we brought what seemed like the whole world along! Besides my own family here in Illinois, we brought a neighbor, my niece and nephew from Wisconsin and a newly made friend of mine, Ala, from Poland. She was really excited when we found lots of different snakes, including a pregnant one, because she said in Poland there aren't exactly a lot of snakes or large varieties like there are here.

I am determined to arrive on time to the next herp searches in the late summer and fall because I was told we missed bunches of snakes, turtles and frogs found before we arrived. We did, however, spot a turtle trying to cross the road as we came into the preserve so we stopped so Ala could give it a lift safely to the other side. Then, when we were leaving, Ron Humbert was looking for someone who could offer help to a female slider turtle he discovered on the toll way on his way to the herp search. This poor thing had been hit by a car and had roughly 20% of its shell just barely hanging on. My vet, Dr. Bongiorno, the miracle worker of Millbrook Veterinary Hospi-

tal in Geneva, also cares for critters at Fox Valley Wildlife Center so I volunteered to get her the help she needed. We were preparing her for the "medi-vac trip" when the next thing we knew, she laid an egg! We got her to Dr. B. who said this was a very lucky painted turtle. Mrs. Turtle didn't lay any more eggs but her shell was skillfully repaired and she has already been released by the Fox Valley Wildlife Center. I took on the task of watching over and incubating the egg for future release. She was due to hatch around August 8, but she arrived safely on July 27. She is no bigger than a quarter! My kids are begging to keep her so we compromised. We'll be releasing her in the late Spring when she's had a chance to get a bit bigger. So as you can see, you never know what will happen on these herp searches, but one thing's for sure, you'll never be disappointed. The cool herps, other critters, and the camaraderie make these trips fantastic!

Results from 2002 Chicago Wilderness Great Herp Searches

This spring's Great Herp Searches were truly great! We covered a lot of ground and uncovered a lot of herps. At four different forest preserves, on a total of six outings, we found the following:

Seventeen different herp species and 179 individual critters. Including 3 species of turtle, 7 snakes, 5 frog/toads, and 2 salamanders. Lake County had lots of blue-spotted salamanders, we found a smooth green snake in Will County, and we saw a pair of mating snapping turtles in Kane County! (ouch?)

So, where will all this information go? All of the data we collected will be used by land managers and scientists to assess the status of herps in different nature preserves and to track any changes in herp populations over time. With 69 people and 142 search hours this year, we can say with some confidence that we know what we've got.

With this year's Great Herp Searches, we have begun something that has never before happened in the Chicago region, or anywhere –regionwide citizen science reptile and amphibian monitoring.

Nearly 100 citizen scientists have put themselves on the list of herp searchers, and this is only the beginning! We will accomplish great things with so many eyes, hands, and ears.

One hundred people adds up to a lot of brain power as well. In the coming year, many of us will be putting our heads together to develop a monitoring project that identifies a subset of "indicator" species. This short list of reptile and amphibian species would be monitored regionwide and used to track changes in the status of herp populations over time. Our data will be a powerful force for herp conservation in the years to come.

The new monitoring will include the current Chicago Wilderness Calling Frog Survey, plus the addition of some new methods for finding animals that aren't advertising their locations to us. Training for the new monitoring will take place at the 2003 winter/spring frog workshops. Sound like fun? It will be!

If you'd like to join the strategy team that will be working on this project next year, or if you'd like to put yourself on the herp searchers list, **let Karen Glennemeier know at (847) 965-1150 or by E-mail at kglennemeier@audubon.org.**

Herpetology 2002

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

CRAB-EATING SNAKES TEAR OFF BITE-SIZED PIECES

B. C. Jayne et al. [2002, Nature 418:143] note that snakes are gape-limited predators and usually swallow their prey whole. The authors describe unique feeding behaviors in two closely related homalopsine snakes, *Gerarda prevostiana* and *Fordonia leucobalia*, which circumvent their gape limitation by removing pieces from newly molted crabs that are too large to be swallowed intact. Captive *G. prevostiana* (n = 15) were observed feeding in a dark room, using infrared video cameras. These captives refused to attack hard-shelled crabs, but bit and rapidly swallowed freshly molted crabs. In 85% of trials (n = 26), the snake pulled its head through a loop in its body and continued to pull on the crab while coiled around it. In some trials (35%), snakes broke off and ate up to four crab legs but none of the carapace. The carapace of the crab was either partially or completely torn apart in 20% and 32%, respectively, of the 22 feedings in which snakes demonstrated the "loop-and-pull" behavior. Tearing of the carapace was most common for large crabs, and only occurred when a loop-and-pull action was used. Based on two wild-caught *G. prevostiana* specimens that had eaten pieces of newly molted crabs that were much larger relative to the snake than any used in the lab trials, ripping crabs apart is unlikely to be incidental, and probably allows *G. prevostiana* to regularly consume crabs with body sizes that exceed its maximal gape. When captive *F. leucobalia* (n = 12) consumed hard-shelled crabs, the carapace always remained intact. However, captive *F. leucobalia* did tear carapaces apart in 50% of trials with very large, soft-shelled crabs. The feeding mechanism used by captive *F. leucobalia* differed in many ways from that used by *G. prevostiana*, making it unlikely that these two species of crab-eating snake have merely retained a common feeding mechanism of a crustacean-eating ancestor.

GREEN FROG FORAGING FORAYS

V. S. Lamoureux et al. [2002, J. Herpetology 36(2):245-254] report that observations on post-breeding movements of radio-implanted green frogs (*Rana clamitans*) revealed that frogs made repetitive forays away from and back to breeding ponds before final migrations to overwintering sites away from the pond. They used a drift fence and radio-transmitters to test the hypothesis that these movements were related to pre-overwintering foraging and not overwintering site selection. Movements were oriented directly to habitats away from the pond, the terrestrial habitats had more food than those closer to the pond edge, and frog mass increased during forays away from the pond but declined at the pond. Foray directions were not correlated with migration direction and foray distances were considerably shorter than migration distances to overwintering sites. An intense, late season, foraging period is probably necessary for the green frog to rebuild lipid reserves following breeding and to prepare for overwintering.

ASP VIPER SYSTEMATICS

M. A. L. Zuffi [2002, Amphibia–Reptilia 23(2):191-213] examined external and internal morphology of 415 specimens of the Palearctic asp viper (*Vipera aspis* subspecies and populations), and outgroup taxa (*V. ammodytes*, *V. berus*), in order to find patterns of distribution and variation throughout the species' range. Within the *aspis* group *V. aspis aspis*, *V. aspis atra*, *V. aspis francisciredi*, *V. aspis hugyi* and *V. aspis zinnikeri* were considered. Ventral scales and number of dorsal bars proved to be the most important external characters to separate populations. Hemipenes showed marked differences between subspecies, in particular in differentiating V. aspis atra, V. aspis hugyi and V. aspis zinnikeri from one another, and also in separating them from the *V. aspis aspis – V. aspis francisciredi* group. Discriminant analysis on external features indicated the complete separation of *V. aspis atra*, *V. aspis hugyi* and *V. aspis zinnikeri* and the almost complete overlap of *V. aspis aspis* and *V. aspis francisciredi*. The strong morphological differences observed suggest that *zinnikeri*, *atra* and *hugyi* are distinct species, even if further molecular analyses are needed to clarify the whole problem, and neotypes should be designated in order to stabilize taxonomy.

CANE TOAD SEXUAL DIMORPHISM

J. C. Lee [2001, Copeia (4):928-935] reports that adult females of the toad *Bufo marinus* significantly exceed adult males in snout–vent length (SVL), but at any SVL, adult males greatly exceed adult females in the robustness of the forelimbs. Secondary sexual shape dimorphism results from greater size and mass of the skeletal elements of males, and especially from their hypertrophied forelimb musculature. The dimorphism is particularly pronounced for those elements of the musculo-skeletal apparatus known or presumed to function in amplexus, and this intersexual difference is hypothesized to have evolved under sexual selection. Reproductively successful males (those found in amplexus) significantly exceed unsuccessful males (calling, nonamplectant males) in SVL, an example of the large-male mating advantage commonly seen in anuran amphibians. However, independent of body size, amplectant males significantly exceed nonamplectant males in forelimb muscle mass, suggesting that it is not large body size per se that confers a mating advantage but rather the robustness of the forelimbs allows males to retain a firm grip on the female in amplexus and, thus, to resist takeovers by competing males in this explosively breeding species. The intrasexual component of Darwinian sexual selection, expressed as male–male competition, is implicated in the evolution of this sexual dimorphism, but a role for female choice cannot be excluded. The results are consistent with the hypothesis that intersexual differences in forelimb muscle mass have evolved under sexual selection, and they suggest that, for males, selection favoring large forelimb muscle mass is operating still.

PLOUGHSHARE TORTOISE REPRODUCTION

R. Bourou et al. [2001, Dodo 37:70-79] note that the ploughshare tortoise, *Geochelone yniphora*, the most threatened endemic tortoise in Madagascar, is only found in five fragmented sites covering 6,600 ha within Baly Bay National Park, northwestern Madagascar. It has an estimated population of about 600 individuals, which are threatened by frequent bush fires. Field research was undertaken from 1993, principally at Cape Sada. A captive breeding center was established at Ampijoroa Forestry Station in September 1986, through collaboration between Durrell Wildlife Conservation Trust (previously Jersey Wildlife Preservation Trust) and the Government of Madagascar, to provide a "safety net" and to prepare for potential future reinforcement of the wild population. This study investigated differential reproduction in adult female ploughshare tortoises from the wild population at Cape Sada and from the captive breeding population at Ampijoroa. At Ampijoroa, data were collected from 1988 to 2000 for eight females. A total of 180 nests were observed, with 657 eggs. At Cape Sada, data were collected from 1994 to 2000 by radiotracking females and monitoring nests; 86 nests with 279 eggs were observed. At Ampijoroa, the mean number of nests per female for any one year varied from 4.0 to 6.4, while at Cape Sada the mean number of nests recorded per female for each year varied from 1.5 to 3.0. The mean number of nests per female per year was thus much higher in captivity (5.6, compared with 2.1 in the wild). The mean fertility rate in the wild (68.5%) was marginally higher than at Ampijoroa (67.2%), and also slightly less variable between females and between years. In the wild mean hatchability was 77.4%, whereas in captivity it was 71.1%, with greater variability between years and females. The nesting period was longer in captivity, from December to July, whereas all wild nestings observed occurred from January to June, with fewer nests and smaller clutch sizes in the "border" months (December and July at Ampijoroa, January and June at Cape Sada). Fertility rate and hatching success at both sites were also lower in the early months of the nesting season, suggesting that, for both wild and captive females, early nesters have lower reproductive output. Despite lower average fertility rates and hatching success, 278% more tortoises would be produced in captivity than in the wild in 10 female-years due to the higher production of nests and eggs. Techniques such as bringing adults into captivity for a period to boost their reproductive output could therefore be beneficial components of a metapopulation management strategy for this species.

HABITAT LOSS FOR *PYXIS PLANICAUDA*

S. T. Tidd et al. [2001, Chelonian Conservation and Biology 4(1):59-65] report that analyses of satellite images from 1963, 1973, 1984 and 1993 indicate a 32% reduction in the primary, dense, dry-tropical forests which are the required habitat for the Malagasy flat-tailed tortoise (*Pyxis planicauda*), or kapidolo. Deforestation rates are increasing, and as much as 50% of the 76,000 ha remaining in the southern portion of the kapidolo's range may be destroyed before 2010. A 50% reduction in the remaining 73,000 ha of habitat in the northern portion of its known range may occur by 2040.

MALFORMATIONS IN CALIFORNIA AMPHIBIANS

P. T. J. Johnson et al. [2001, Herpetologica 57(3):336-352] note that increasing reports of amphibian limb malformations from many parts of North America have prompted investigations into the potential causes of these abnormalities and their implications for amphibian populations. Over a two-year period, the authors monitored the frequency and composition of morphological abnormalities in four amphibian species (*Hyla regilla*, *Taricha torosa*, *Bufo boreas* and *Rana catesbeiana*) from two California ponds. The frequency of abnormalities differed significantly by species, life-history stage, pond and season. Generally, the frequency and severity of abnormalities were greater in the amphibians from Frog Pond over those from Hidden Pond, and in larval stages over emerging and adult amphibians. Larvae of *T. torosa* exhibited the highest rate of abnormalities, ranging from 15 to 50%, followed by larval and metamorphic *H. regilla* (10–25%), and finally by metamorphic *B. boreas* and *R. catesbeiana*, both of which had rates of less than five percent. Within each species, the composition of abnormalities was strongly consistent between years, ponds and early life-history stages. The most severe malformations were recorded in *H. regilla*, and more than 60% of the abnormalities in treefrogs involved extra hindlimbs, femoral projections, and skin webbing. Similarly severe, the abnormalities of *R. catesbeiana* were dominated by extra and missing hind- and forelimbs. In *B. boreas* and *T. torosa* the most common morphological abnormalities were missing limbs and digits, which accounted for approximately 75% and 95%, respectively, of their total abnormalities. Potential causes of the observed abnormalities, including infection by the trematode *Ribeiroia*, and the conservation significance of amphibian malformations are discussed.

COVERBOARDS VERSUS NATURAL COVER

C. M. Houze, Jr., and C. R. Chandler [2002, J. Herpetology 36(1):75-81] conducted a field study to evaluate whether coverboards are as effective for sampling terrestrial salamanders as searching natural cover objects such as fallen logs and branches. At each of five sites in Jenkins County, Georgia, they paired a grid of 100 wooden coverboards (30.4 × 30.4 × 2 cm) placed 10 m apart with an adjacent grid containing only natural debris. Searches under coverboards detected most of the same species (*Plethodon ocmulgee*, *Eurycea cirrigera*, *Eurycea quadridigitata* and *Eurycea guttolineata*) as found under natural cover (same four species plus *Ambystoma opacum*). However, salamanders were encountered at lower average rates under coverboards (0.8 salamanders per grid search) than under natural cover (2.3 salamanders per grid search), and this pattern was consistent across seasons. The number of salamanders encountered was more variable within coverboard grids than within grids of natural cover; mean encounter rates were equally variable among grids for the two techniques. For the most commonly encountered species (*P. ocmulgee*), individuals from coverboards were similar in size to those found under natural cover. There was no tendency for coverboards to accumulate more salamanders through time. Temperatures were more variable under coverboards than under natural cover.

THERMAL BIOLOGY OF MELANISTIC SNAKES

T. D. Bittner et al. [2002, Copeia (2):477-482] note that both color (i.e., reflectance) and body size should influence body temperature in heliothermic ectotherms. They compared heating rates and equilibrium temperatures between the normal striped morph and the solid black melanistic morph of the garter snake, *Thamnophis sirtalis*, from polymorphic populations in the Lake Erie region. Snakes ranging in mass from 2.6 to 216.2 g were divided into three size classes (small, medium, and large). Using temperature-sensitive PIT tags, pairs of snakes were tested under artificial light in an environmental chamber, and curvilinear regressions were used to estimate heating rate and equilibrium temperature. In small and medium-sized snakes, no difference between the morphs was found either in heating rate or equilibrium temperature, suggesting that melanism does not provide a thermal advantage in young snakes. In large snakes, morph affected equilibrium temperature, but not heating rate. Melanistics averaged 1.3°C warmer than striped snakes. This difference may represent a thermal advantage for adults, of which gravid females are the largest and may have the most to gain from a thermal advantage.

SYSTEMATICS OF THE BEVELNOSED BOAS

H. M. Smith et al. [2001, Hamadryad 26(2):283-315], based on observations in captivity of 35 live snakes from various populations, and external morphological data taken on them and 359 museum specimens, regard *Candoia carinata* auctorum as a complex of three species, in turn comprising two subcomplexes. The *C. carinata* subcomplex consists of two species, each with two subspecies: *C. s. superciliosa* and *C. s. crombiei* subsp. nov., and *C. c. carinata* and *C. c. tepedeleni* subsp. nov. The *C. paulsoni* subcomplex consists solely of *C. paulsoni*, with six subspecies: *C. p. paulsoni*, *C. p. mcdowelli* subsp. nov., *C. p. rosadoi* subsp. nov., *C. p. sadlieri* subsp. nov., *C. p. tasmai* subsp. nov. and *C. p. vindumi* subsp. nov. All species and subspecies are allopatric, except for marginal sympatry of *C. c. tepedeleni* with both *C. p. paulsoni* and *C. p. mcdowelli*. Intergrade populations are known to occur between *C. p. paulsoni* and *C. p. vindumi*. A key to the ten taxa in the complex is included.

BEHAVIOR OF FEMALE POISON-DART FROGS

A. Haase and H. Pröhl [2002, Amphibia–Reptilia 23(2): 129-140] note that female strawberry poison-dart frogs (*Dendrobates pumilio*) exhibit highly evolved maternal care, including tadpole transport and tadpole provisioning with unfertilized eggs. The authors observed that tadpole-rearing and mating activity are mutually exclusive behavioral states in a Costa Rican population. Tadpole-rearing females did not engage in courtship activity. Only nonrearing females courted. Nonrearing females occupied larger home ranges than tadpole-rearing females, which may be related to female selection of mates. For the first time aggressive female–female interactions were observed in the field. Tadpole-rearing females were significantly more aggressive than nonrearing females, especially in the vicinity of their offspring-rearing sites.

RESTING STATE TERMINOLOGY

R. Douglas [2002, African Herp News 34:4-8] notes that until recently most animals' resting states were simply defined as hibernation, be they long periods, short periods, during summer or during winter. He supplies broad definitions for the following terms: aestivation, brumation, carnivore lethargy, cryptobiosis, denning, diapause, dormancy, ectothermic, endothermic, heterothermic, hibernation, homeothermic, hypobiosis, poikilothermic, quiescence, resting state, retraherence and torpor. He then makes recommendations as to their usage with regard to reptiles and amphibians. The author's conclusions can be summarized as follows: It would appear that the term quiescent (quiescence, quiescency) best describes both short-term summer and winter resting states. Long-term summer resting states would be covered by aestivation, and long-term winter resting states by brumation. Extended resting states where aestivation merges into brumation would best be described as dormancy. Brumation would be largely confined to long-term overwintering states in colder climates, while hibernation should be excluded completely from usage in relation to reptiles and amphibians. If found acceptable, the term retraherence, although not widely used, may be a suitable substitute for quiescence.

CO_2 INFLUENCES SEX DETERMINATION IN TWO TURTLE SPECIES

C. R. Etchberger et al. [2002, Amphibia–Reptilia 23(2):169-175] incubated eggs of wild-caught *Trachemys scripta* and *Graptemys pseudogeographica kohnii*, two emydine turtles known to have temperature-dependent sex determination, at 28.5°C in boxes aerated with one of four gas mixtures (two in *G. p. kohnii*). Across all eggs, elevated levels of carbon dioxide significantly feminized sex ratios in both species and also reduced hatching success. When eggs were grouped into clutches, all comparisons between 0% and elevated carbon dioxide showed feminization in the portions of the clutches at elevated carbon dioxide, a statistically significant result for *T. scripta*. Accumulation of biogenic carbon dioxide from embryonic respiration and other sources is thus likely to affect sex ratios in natural nests under some conditions, perhaps through an effect on some aspects of embryonic pH.

A NEW SPECIES OF *CHELODINA*

W. P. McCord and S. A. Thomson [2002, J. Herpetology 36(2):255-267] recognize Australian specimens of what was previously known as *Chelodina novaeguineae* to be a distinct species, which they describe as Cann's longneck turtle, *Chelodina canni*. The species is named in honor of John Cann of Sydney, Australia, for his lifetime of work with the freshwater turtles of Australia. The species *Chelodina novaeguineae* is restricted to southern New Guinea. The new species differs from its New Guinea counterpart in being a larger species with a broader shell and wider plastron, the skull having paired premaxillae and a narrower parietal ridge, having a single frontal bone, posteriorly partially dividing the parietals, in the form and relationship to the pterygoids of the vomer, and a narrower crista paroccipitalis.

IMPACTS OF PIT TAGS ON SALAMANDERS

N. Perret and P. Joly [2002, Herpetologica 58(1):131-138] investigated the impacts of PIT-tagging and tattooing on survival, condition, and egg laying in alpine newts (*Triturus alpestris*) by both field and laboratory experiments. A laboratory experiment made it possible to compare impacts of each marking technique with control groups of unmarked newts. This experiment consisted of a 3 × 3 factorial plan (popula tion, replication and marking) using 90 individuals of each sex. Neither survival nor body condition were affected by marking. No variation was detected between marking treatments. However, marked females laid significantly more eggs than control females. The authors assume that such higher reproductive outputs are responses to the stress induced by skin injury by both marking techniques, but this hypothesis remains to be tested. The field experiment consisted of monitoring a newt population in a pond where individuals (n = 121) were marked by either marking technique. No difference in survival or in body condition was detected between marking treatments. Either technique reliably met the requirements of data processing. The present study shows that data obtained with both techniques can be regarded as similarly suitable for estimating population parameters. However, because of better long-term reading reliability, PIT-tagging appears to be the preferred one, provided that body size is sufficiently large to accommodate a transponder.

MOVEMENTS IN PIG-NOSED TURTLES

J. S. Doody et al. [2002, Copeia (1):93-103] studied dry season movement patterns, home ranges, and activity in a population of pig-nosed turtles (*Carettochelys insculpta*) in the wet-dry tropics of northern Australia. Compared to other turtles inhabiting lotic habitats, *C. insculpta* occupied considerably larger home ranges, covering up to 10 km of river. Of previously published factors influencing home range size, low productivity of the (micro) habitat may best explain the extensive home ranges in *C. insculpta*. Patchiness and low nutrient value of the chief food (aquatic vegetation) of *C. insculpta* may force turtles to cover large expanses of river to acquire sufficient energy for growth and reproduction. Females were more active, moved farther, and occupied larger home ranges than males. Home ranges of females comprised 1–4 activity centers, many of which were associated with thermal springs. Females may exhibit increased activity and movements relative to males because of sexual inequality in parental investment, where food is particularly limiting (e.g., in species with biennial reproduction). Biennial reproduction in the population allowed the examination of the influence of reproductive condition on home range size, movements, and activity. Reproductive condition did not influence home range or activity, but gravid turtles moved father between successive sightings than nongravid females. Individual data corroborate these findings, with females moving farther between successive sightings while gravid compared to while spent. Contrary to previous reports, turtles did not appear to move into estuarine areas or lowland floodplains during the wet season but moved into the riparian forest and possibly into wetlands adjacent to the main channel in the vicinity of their dry season home ranges.

LIFE HISTORY OF GIANT RIVER TURTLES

N. Valenzuela [2001, J. Herpetology 35(3):368-378] notes that energy allocation to eggs and nest site selection by females can affect life-history variables such as offspring size, offspring number, developmental rate, survivorship, growth rate and performance in oviparous reptiles. Nest site selection can affect offspring phenotype by altering incubation conditions. The author presents evidence of a positive effect of female size on clutch size, egg mass and nest depth through the study of trackways left by female river turtles, *Podocnemis expansa*, on their nesting beaches. Larger females laid larger clutches composed of larger eggs, which were buried deeper than clutches laid by smaller females. The data suggest that *P. expansa* does not conform to optimal propagule size models. Neither egg size nor clutch size reached a plateau as female size increased. Females seem to allocate the extra energy (in absolute terms) gained allometrically with increasing size and age to both number and size of eggs. There was no evidence of a trade-off between egg size and number after removing the effect of female size. Larger eggs produced larger hatchlings that survived better but grew less than individuals of smaller initial size during the first two months of life, under unlimited food conditions. The author suggests that fitness of female *P. expansa* increases by producing larger eggs because of the advantage that larger hatchlings have in survival. Deeper nests experience cooler temperatures and tend to produce a higher percentage of males than more superficial nests. Therefore, there is a potential for important effects of nest depth on sex ratios produced by different sized females within the population and possibly by single females throughout their lifetime. Constant temperature in artificial incubation experiments had an effect on the size of individuals at hatching, but differences vanished by the second month of age via the greater growth rate shown by individuals of smaller initial size.

PREDATION ON GREEN FROG TADPOLES

T. L. Tarr and K. J. Babbitt [2002, Amphibia–Reptilia 23(1): 13-20] examined the microhabitat distribution of green frog larvae (*Rana clamitans*) and two common predacious insect genera at 27 wetlands in southern New Hampshire to determine if it was related to the presence of vegetation. *Rana clamitans* and hemipterans (*Belostoma* spp.) were rarely captured in non-vegetated microhabitats. Larval odonates (*Aeshna* spp.) were captured more frequently in vegetated microhabitats but the difference was not significant. In a laboratory experiment, the authors tested the effects of plant density on the survival of *R. clamitans* larvae exposed to either *Belostoma flumineum* or *Aeshna mutata*. When no cover was available, survival of *R. clamitans* tadpoles was very low when exposed to either predator. *Belostoma flumineum* was a less effective predator than *A. mutata*, and survival rates of tadpoles did not differ between high and low plant density when exposed to this predator. In contrast, survival of tadpoles was significantly higher in the high density vegetation treatment compared to the low density treatment when exposed to *A. mutata*. Although plant structure can reduce predation on *R. clamitans* larvae, the level of structure necessary to significantly mediate predation may depend largely on the foraging mode of the predator.

In Memoriam: Sean McKeown (1944–2002)

The world of herpetology recently suffered a great loss upon the death of Sean McKeown. His aim was to make a difference by sharing his love of herpetology—the wonders of the many species, the helpful tips on care, the history of some famous creatures, the commitment to conserving reptiles and amphibians.

Sean used his vast specialized knowledge of reptiles and amphibians to help reptile related programs. For example, on the day of his death, I was meeting with U.S. Department of Agriculture and State of Hawaii Agriculture officials in Hawaii to determine ways to implement some of Sean's recommendations to reduce the exploding population of the Puerto Rican coqui frog in Hawaii. Unaware of his death, the federal and state agriculture representatives at our meeting named Sean an official consultant to this Coqui Control Program.

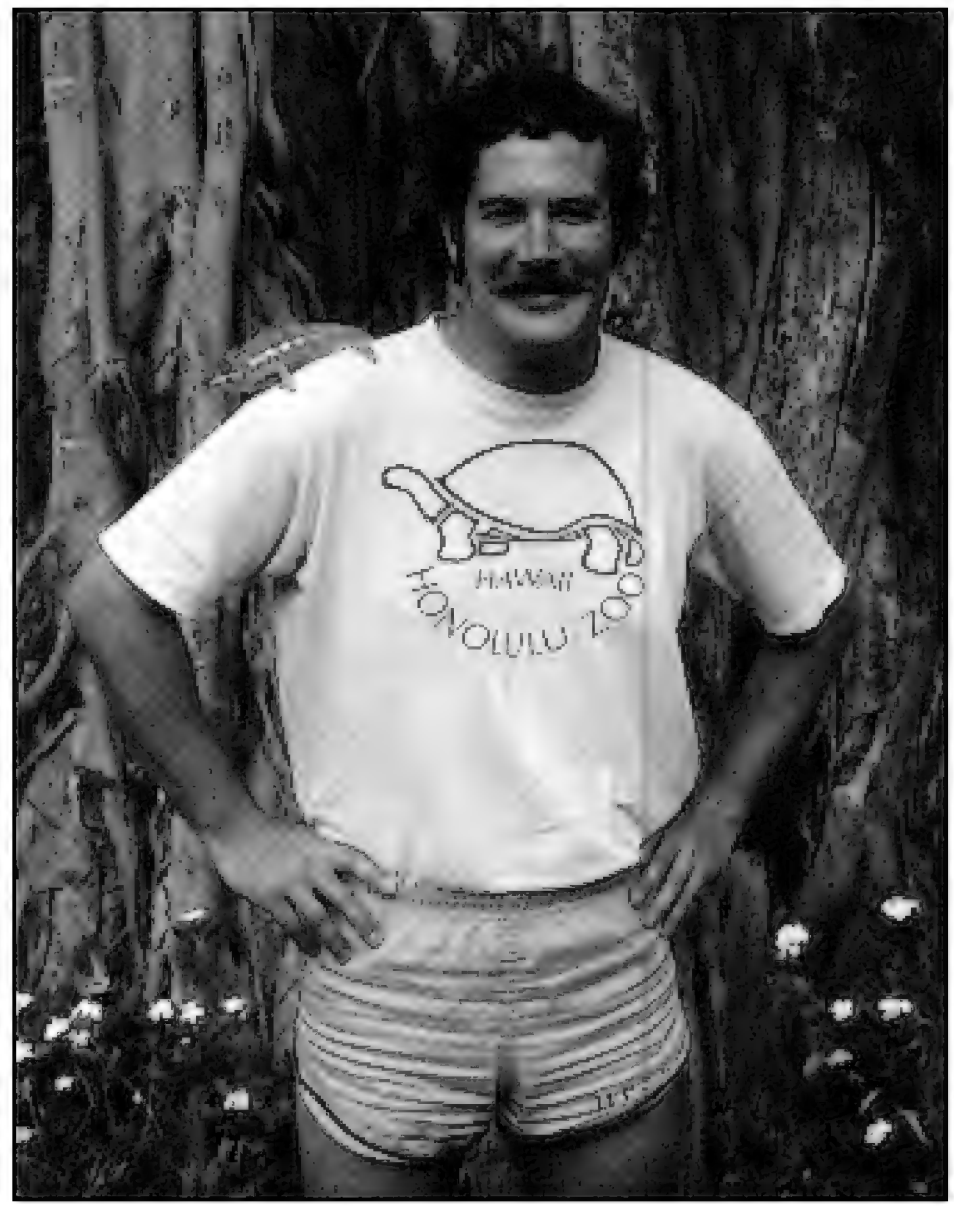
Sean's influence was far-reaching. He served as a member of the Hawaii-based Brown Tree Snake Control Group, which I founded. In 1991, this group traveled to Guam to investigate and help develop plans to reduce the probability of brown tree snakes leaving Guam and becoming established in Hawaii and other islands. I remember how Sean emphasized to Guam's Governor Joseph Ada the importance of establishing a system of highly trained snake detecting dogs to inspect aircraft and ships leaving Guam. Sean delighted in the growth of Guam's almost nonexistent snake detection/prevention plan to today's USDA Wildlife Services program there with 35 employees and 14 trained dogs.

Sean McKeown's *Field Guide to the Reptiles and Amphibians in the Hawaiian Islands* is the only book to help identify and care for the many and diverse reptiles found in Hawaii—including Jackson's chameleons, Madagascar day geckos, and red-eared turtles. I remember helping him collect photographs for this book. A perfectionist for high quality photographs which make his book outstanding—he insisted that the eyes on each creature be visible.

Sean was deeply interested in herpetological history, which is reflected in some of his *Reptiles* magazine articles. We co-authored "The Royal Tortoise" which appeared in the December 1999 *Reptiles* magazine. The ancient Tongan tortoise, Tui Malila, that lived on the palace grounds until 1966 is believed by Tongans to have been brought there by Captain James Cook which would make the animal almost two hundred years old. We followed many leads but sadly could not confirm any evidence linking this tortoise with the great British navigator.

In another *Reptiles* article, Sean covered new facts about Charles Townsend's New York Zoological Society expedition in 1928 to collect Galapagos tortoises to establish breeding populations. I recall Sean's great pleasure in locating and interviewing an elderly survivor of Townsend's expedition.

Sean encouraged others to record their reptile experiences. He and I worked together to prepare a paper on the Honolulu Zoo's achievement of hatching and raising the first Galapagos tortoise in America in 1954.



Sean was the curator of reptiles at the Honolulu Zoo and then the Chaffee Zoo in Fresno for a period of twenty years beginning in 1975. Duane Meier, current curator of reptiles at the Honolulu Zoo who succeeded Sean and received much of his training from him, recalls, "Sean always treated me as a colleague, an equal." Sean's awards included the American Association of Zoos and Aquariums prestigious Edward H. Bean Award presented to the Honolulu Zoo for the first successful captive breeding of the Madagascar angulated tortoise in 1983.

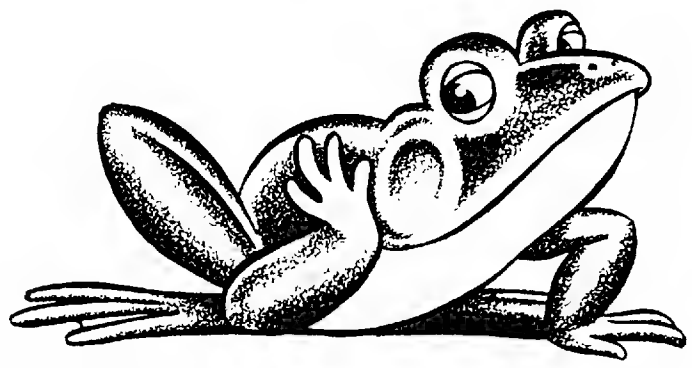
For many years he was editor of the *Vivarium* magazine. He published numerous scientific papers and was a frequent contributor and columnist for *Reptiles* magazine in spite of his weakened physical condition in the past few years. He loved to travel and meet with foreign herpetologists and go into the field. He visited Australia, South America, Africa, and was particularly fond of the Pacific islands. He was a consultant to the Republic of the Seychelles Conservation Department and assisted in developing a system for captive propagation of giant tortoises there.

I will miss Sean's wry sense of humor and his ability to laugh at herpetologists' illogical behavior—including his own. America has lost one of its most brilliant, hardworking, and active leaders of reptile conservation of this era. We will dearly miss him. Sean died July 11, 2002, about two years after a heart transplant. He is survived by his wife Wendy, of Los Osos, California, and two daughters.

Paul Breese, Honolulu Zoo Director Emeritus

The Tympanum

Grand Cayman Blue Iguana Approaches Extinction



While the world focuses on more widely publicized endangered species such as whales, whooping cranes, giant pandas, and other high-profile wildlife, the Grand Cayman Blue Iguana, *Cyclura nubila lewisi*, is quietly heading for extinction in the wild, and is considered one of the most critically endangered reptiles in the world.

In a report issued June 22, 2002, by Fred Burton, director of the iguana recovery program for the National Trust for the Cayman Islands, it is estimated that only 10 to 25 of these magnificent creatures remain in the wild.

The report is a result of surveys conducted between December 2001 and June 2002 as a part of the Blue Iguana Recovery Plan, a document detailing wide-ranging conservation measures for the Blue Iguana. The stated purpose of the plan is "to restore a wild population of the Grand Cayman Blue Iguana sufficient to remain viable in the long term." It was previously believed that between 100 and 200 animals remained in the wild, based on a survey conducted in 1993.

The new report concludes that without intervention and immediate preventative measures, the surviving wild population will be functionally extinct within the next 5 years.

The report further states, "since 1993 the range occupied by Blue Iguanas (not including the managed population released by the Trust in the QE II Botanic Park) has shrunk from approximately 7.0 to 3.7 square kilometers, and within the remaining range the population has been reduced approximately five-fold. Many of the surviving iguanas are isolated, with only one location identified where breeding has occurred in the last two years."

Once in abundance, iguana populations began to decline with the colonization of islands in the West Indies, as the animals fell prey to human consumption and then predation by introduced feral mammals. In the wake of advancing civilization, pristine habitats were destroyed and replaced with residential and commercial development that continues today, leaving virtually no natural habitat for the iguana.

These few remaining iguanas, isolated in small habitat pockets, are under continual attack by free-ranging domestic dogs. High juvenile mortality due to uncontrolled feral cats and rats reduces recruitment to adult ranks, and is a slow and insidious process that results in an increasingly aged population. To make matters worse, following the development of new interior roadways and increased traffic, iguanas are often killed while crossing or basking on these roads.

Mr. Burton states, "In the long term, it is clear that the future of wild Blue Iguanas must now rest on managed populations in protected areas. Sufficient protected habitat does not currently exist to support the numbers of wild iguanas that are needed to secure the future of this species. Additional protected habitat for Blue Iguanas is therefore essential."

The National Trust for the Cayman Islands has managed a small captive breeding facility on Grand Cayman since 1990 producing small numbers of iguanas that are being released annually in the adjacent Queen Elizabeth II Botanic Park. The released population has now grown to some 30 individuals, but the Park's area is far to small to accommodate the thousand-strong population size needed for long term viability. The program is chronically underfunded and relies on donations. Mr. Burton, who has spearheaded conservation efforts for the Blue Iguana and the breeding facility from the beginning, currently volunteers his time so that such limited funding as is available can go entirely into conservation actions.

The short term future of this rare iguana will likely depend on captive programs, both in Grand Cayman (*in situ*) and the U.S.(*ex situ*). The *ex situ* program consists of the AZA Rock Iguana Species Survival Plan (SSP) which will attempt to maintain a stable and genetically diverse captive population of 225 iguanas as a hedge against extinction in the wild. In the absence of wild sub-populations the SSP will effectively become the backup population. Such an effort will require a far greater commitment from the zoo community than what now exists. New dedicated iguana management facilities in warm-climate southern zoos are desperately needed. The *in situ* program will need to expand the scope of its operation in order to generate larger numbers of hatchling iguanas that can be head-started for future release. With the Trust-run facility at maximum capacity, funds are urgently needed to construct new breeding and rearing enclosures. Recently the Disney Wildlife Conservation Fund, through the International Iguana Foundation, awarded a grant that will pay for construction materials, but funding is still needed to complete the project.

Extinction of the Blue Iguana is not inevitable, but the conservation community and its many supporters worldwide must act decisively and quickly if we are to prevent it. Assistance, funding, and corporate sponsorships must be found to support the measures outlined in the Blue Iguana Recovery Plan. If you can help or want more information regarding the Blue Iguana Recovery Plan, and for tax-deductible donations, please visit www.cyclura.com. We still do have the time and an opportunity to help, to restore these magnificent giant lizards to their former glory, in the wild where they truly belong.

John Binns, International Reptile Conservation Foundation, jbinns@cyclura.com.

Unofficial Minutes of the CHS Board Meeting, July 19, 2002

Jack Schoenfelder called the meeting to order at 7:30 P.M. Board members Tom Anton, Dan Bavirsha, Darin Croft, Michael Dloogatch, Emily Forcade, Lori King and Jenny Vollman were absent. Those present wish they were at IHS too.

Officers' Reports

Recording Secretary: The minutes of the previous board meeting had been read by all in attendance prior to the meeting. Jack Schoenfelder's E-mail address was corrected to read jschoenf@ivytech.edu then the minutes were accepted.

Treasurer: Greg Brim reported that our cash is down from about $40,000 to about $38,000 but that the drop was expected and is not too bad.

Corresponding Secretary: Steve Sullivan reported that we are getting lots of phone calls on the herp line about how to care for animals. All such callers are invited to attend the monthly meetings.

Vice-president: Lori King was absent. The board learned that she will ask Rob Carmichael to bring in an eastern massasauga for this meeting. This will help us kick off our massasauga conservation project. Steve Sullivan is working feverishly on a massasauga exhibit. The new massasauga T-shirts will be sold at the meeting.

Standing Committees

Grants: Mike Redmer reported that several people who had received grants from the CHS thanked us for our support when they presented their work at the joint meeting of the Society for the Study of Amphibians and Reptiles, the American Society of Ichthyologists and Herpetologists, and the Herpetologists' League.

Shows: Jenny Vollman was absent. It was reported that Rich Crowley, Jim Hoffman, Jenny Vollman, and the Bavirshas put on a successful show at Argonne National Laboratory.

Raffle: Ron Humbert said we are running low on interesting items for the raffle. Steve will send more letters soon. Some valuable *Reptiles* magazine subscriptions will be on the raffle table during the September meeting.

Adoptions: Want an iguana?

Ad Hoc Committees

Massasauga Conservation: Support massasauga conservation! Buy the cool massasauga T-shirts! 100% of profits go to the cause.

Trips: There is still plenty of room on the bus for the September 28 Detroit Zoo trip.

Animal of the Month: For August members can bring any herp they have owned for more than 10 years.

Speakers Bureau: Do you like to talk about herps? Then join the speakers bureau! Write an abstract about your presentation and give it to Mike Redmer. Make sure to tell him what audiences you presentation is appropriate for and any technical requirements. A list of available speakers will be published on our website. More details about the speakers bureau will be determined at future board meetings.

Old Business

The massasauga display that Steve Sullivan is creating was presented and critiqued. It should be ready for the July meeting.

New Business

Ideas for herp posters were discussed.

Round Table

It was announced that Sean McKeown passed away. Condolences were expressed.

The meeting was adjourned at 8:57 P.M.

Respectfully submitted by Corresponding Secretary Steve Sullivan.

Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail: GrmtRodent@aol.com.

For sale: murine-pathogen-free rats and mice available in all sizes, live or frozen: pinkies, fuzzies, crawlers, small, medium and large. Frozen crawler mice in lots of 2000, $.17 each. Also available, full grown hairless mice. FOB shipping point. Master Card accepted. Call (518) 537-2000 between 8:00 A.M. and 5:00 P.M. or write SAS Corporation, 273 Hover Avenue, Germantown NY 12526 for prices and additional information.

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. We feed our colony a nutrtionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. Mice starting from: pinks, $.17 each; fuzzies, $.24 each; hoppers, $.30 each; weanling, $.42; adult, $.48. Rats: starting with pinks at $.45 each, to XL at $1.80 each. Discount prices available. We accept Visa, MC, Discover or money orders. P.O. Box 85, Alpine TX 79831. Call us **toll-free** at (800) 720-0076 or visit our website: http://www.themousefactory.com.

For sale: from Bayou Rodents, excellent quality feeder mice and rats. Every size available. Pinks starting at $20/100. Orders are shipped by overnight service Monday thru Thursday. We accept Visa, MasterCard and Discover. For more info, contact Rhonda or Peggy, (800) 722-6102.

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice availabe: small newborn pinks up to jumbo adults. Prices start at $25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: herp books. *Snakes of Southern Africa* by Vivian FitzSimons, 1962, 423 pp., 74 color plates, 106 figs., 77 range maps, large format, excellent reference, part of DJ missing and torn, bookplate inside front cover, otherwise excellent condition, hardbound, $185; *Handbook of Lizards* by Hobart Smith, 1946, 557 pp., 134 b&w plates, 41 maps, no DJ, bookplate and signature of former owner, author's name lettered across edges of bottom of pages, hardbound, $40; *Handbook of Snakes of the U.S. and Canada* by Albert and Anna Wright, 1957 (third printing), 2 vols., 1105 pp., 304 figs., top of DJ slightly torn on both vols, hardbound, $l00; *Turtles of the United States & Canada* by Clifford Pope, 1961 (1939), 337 pp., 99 b&w photos, DJ, hardbound, fine cond., $30; *Autecology of the Copperhead* by Henry Fitch, 1960, 288 pp., 20 b&w plates, 26 figs., word "copperheads" lettered in ink on spine, covers mildly sun discolored, softbound, $32; *Wildlife in Danger* by Fisher, Simon and Vincent, 1969, 368 pp., 32 color plates, many b&w drawings, 17 pp. on reptiles and amphbians, DJ, hardbound, $16. All books in excellent condition except as noted. Prices for orders $25 or more include postage. Postage $2.50 for orders less than $25. William R. Turner, 6014 Blue Ridge Drive, Apt. A; Highlands Ranch, CO 80130, (720) 344-6197, E-mail: turnerbmrk@prodigy.net. Send E-mail address for complete book list.

For sale: Rat snakes. Cunningham's *Elaphe*—Specializing in rare *Elaphe*. Working with *E. dione*, *E. ridleyi*, *E. climacophora*, corns, and many more. Rick, (309) 353-9661. E-mail: rick1@ntslink.net. Web site: http://www.cunninghamselaphe.com.

For sale: Green anacondas, c.b. 9/01, beautiful, healthy and DOCILE, $175 each; yellow anacondas, c.b. 6/01, flawless little screamers, $95 each; Amazon tree boas, c.b. 7/01, solid yellow, $125, orange and green, $150, both are female; 11' female tiger retic, stunning specimen, tame and a great feeder, $550 or best offer; jungle carpet pythons from nice black and yellow parents, $100 each or $175/pair. Mark Petros, Strictly Serpents, (847) 836-9426, E-mail: MLPserpent@hotmail.com.

Herp tours: Adventure trips to **Madagascar**! Journey somewhere truly unique to seek and photograph nature on the world's least-studied mini-continent. For maximum herp fun and discovery, join Bill Love as we go where few people will ever venture in their lives. Let his experience assure a comfortable tour finding the most colorful and bizarre species on the planet! Get all the details at Blue Chameleon Ventures' comprehensive new website: < http://www.bluechameleon.org>, E-mail: bill@bluechameleon.org, or call (941) 728-2390.

Herp tours: Experience the Amazon! Road-ride in Costa Rica! See and photograph herps where they live, have fun doing it, make good friends and contacts, and best of all . . . **relax!** From wildlife tours to adventure travel, **GreenTracks, Inc.** offers the best trips led by internationally acclaimed herpers and naturalists. See our website < http://www.greentracks.com> or call (800) 9-MONKEY. E-mail: greentracks@frontier.net.

Pet Services in Your Home: **All Pets, Unlimited** is owned by a licensed, certified and bonded veterinary lab technician with >20 yrs. experience. This service specializes in patient care as well as caring for your pets in your absence. **Exotics** are welcome and the service is veterinarian recommended. Please call Beverly McGrane for pricing information @ (312) 328-0648.

Wanted: big-headed turtles; mata mata turtles; Mexican giant mud turtles (*Staurotypus triporcatus*); exceptionally large common snappers (45 lbs. & up); large alligator snappers (over 90 lbs.); spectacled caiman from Trinidad, Tobago and Surinam; dwarf caiman; smooth-fronted caiman; albino turtles (except red-eared sliders). Walt Loose, (610) 926-6028, 9:00 A.M. – 1:00 P.M. or after 11:30 P.M. Eastern Time.

Line ads in this publication are run free for CHS members—$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail: < MADadder0@aol.com>.

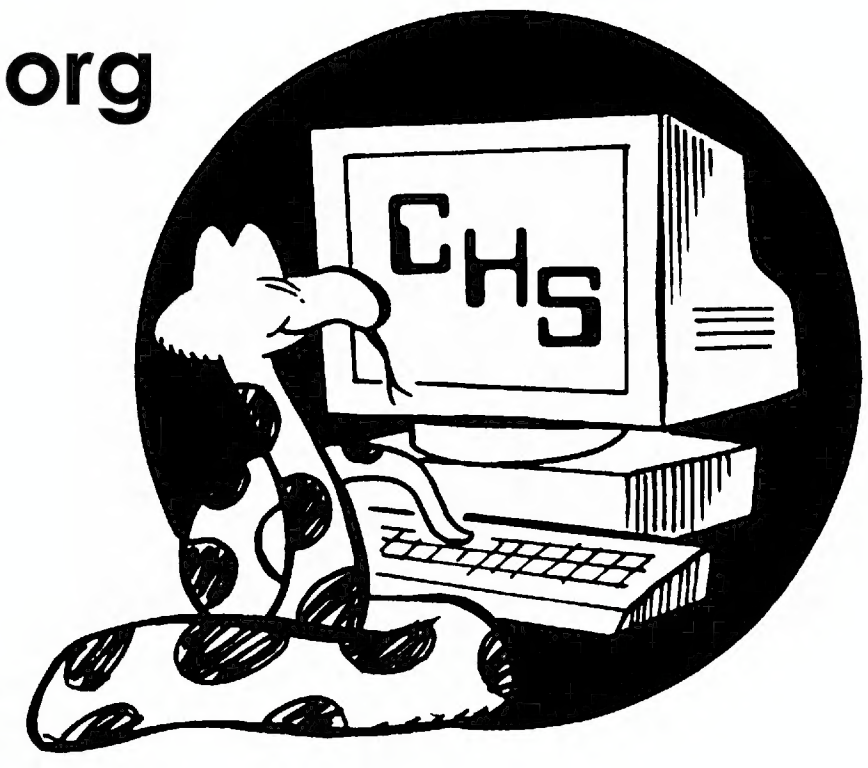
We're goin' to the zoo, zoo, zoo

All aboard for a fun-filled day trip to the Detroit Zoo. Visit *Amphibiville,* home of the National Amphibian Conservation Center. Enjoy a behind-the-scenes tour of the zoo's pre-eminent *Reptile House*. Afterwards, explore the zoo on your own and take in *The Arctic Ring of Life Exhibit* and the *Butterfly/Hummingbird Garden.* Learn more about the zoo at www.detroitzoo.org. The CHS has arranged luxurious, washroom-equipped bus transportation, with movies-in-transit. Anyone who attended the International Herpetological Symposium in Detroit last summer can tell you what a special and hospitable zoo this is! So reserve the date: **Saturday, September 28**, from 6 A.M. until 10 P.M. Seats are limited and will be available on a first-come-first-serve basis . . . so don't delay. Contact Bob Herman for details at (773) 667-4095 or by E-mail at bobherman@ameritech.net. Round-trip transportation with zoo admission is just $35 per person! Children are welcome.

You can come too, too, too!

Next time you surf the WorldWide Web, crawl, run, slither, slide, jump, or hop over to the CHS web site!

www.chicagoherp.org



You'll find:

- **Announcements**
- **CHS animal adoption service**
- **CHS events calendar & information**
- **Herp news**
- **Herp links**
- **Meeting/guest speaker information**
- **Photos of Illinois amphibians & reptiles**
- **Much, much more!**

Chicagoherp.org is accepting applications for banner advertisements or links from herpetoculturists and manufacturers of herp-related products. Visit the site and contact the webmaster for details on how you can sponsor CHS!

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, August 28, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. Instead of the usual guest speaker, this meeting will feature a panel of CHS veterans who will field questions from the audience. So if there's anything herp-related that you've always wanted to know but haven't known whom to ask, this will be your golden opportunity.

At the September 25 meeting, **Pete Taylor**, head keeper at the St. Louis Zoo, will speak about Cuvier's dwarf caiman, *Paleosuchus palpebrosus*. Pete will discuss what they've learned from their captive specimens in St. Louis about the behavior of this fascinating little crocodilian, which he refers to as "the matchbox croc."

The regular monthly meetings of the Chicago Herpetological Society now take place at Chicago's newest museum—the **Peggy Notebaert Nature Museum**. This beautiful new building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the September 13 board meeting, to be held at the North Park Village Administration Building, 5801 North Pulaski Road, Chicago. To get there take the Edens Expressway, I-94, and exit at Peterson eastbound. Go a mile east to Pulaski, turn right and go south to the first traffic light. Turn left at the light into the North Park Village complex. At the entrance is a stop sign and a guardhouse. When you come to a second stop sign, the administration building is the large building ahead and to your left. There is a free parking lot behind the building.

The Chicago Turtle Club

In lieu of the usual August meeting, CTC members will exhibit their turtles and tortoises at one of the North Shore's grandest events, the annual Evanston CommUNITY Picnic, Sunday, August 25, Noon – 5:00 P.M., Ingraham Park (behind the Civic Center), 2100 Ridge Street, Evanston. For more info call Lisa Koester, (773) 508-0034, or visit the CTC web site: http://www.geocities.com/~chicagoturtle.

HERP OF THE MONTH

Each monthly meeting will showcase a different herp. CHS members are urged to bring one specimen of the "Herp of the Month" to be judged against the entries from other CHS members. Prizes will be awarded to the top three winners. For August the category will be **any herp you have kept for 10 years or more**.

NEW MAILING ADDRESS FOR THE CHS

The mailing address of the Chicago Herpetological Society is now **2430 N. Cannon Drive, Chicago IL 60614**. Mail to the old address will be forwarded to us for the next few months, but please make note of the new address.

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